# Code changes Recommended Based on Interpretation Requests from NEEC/Pierce County

**14-14**: Definition, Refrigerated Warehouse Cooler. Staff recommends incorporating ASHRAE 90.1-2013 language for clarity and conformity:

**REFRIGERATED WAREHOUSE COOLER.** An enclosed storage space that has a total chilled storage area of 3,000 ft<sup>2</sup> or greater that can be walked into and capable of being refrigerated is designed to maintain a temperatures above of greater than 32°F but less than 55°F .that can be walked into and has a total chilled storage area of 3,000 ft<sup>2</sup> or greater.

**REFRIGERATED WAREHOUSE FREEZER.** An enclosed storage space that has a total chilled storage area of 3,000 ft<sup>2</sup> or greater that can be walked into and is designed to maintain a temperature capable of being refrigerated to temperatures at or below 32°F-that can be walked into and has a total chilled storage area of 3,000 ft<sup>2</sup> or greater.

### ASHRAE language:

walk-in cooler: an enclosed storage space of <3000 ft2 (<280 m2) that can be walked into and that is designed to maintain a space temperature of >32°F (>0°C) to  $\leq$ 55°F (<13°C).

walk-in freezer: an enclosed storage space of <3000 ft2 (<280 m2) that can be walked into that is designed to maintain a space temperature of  $32^{\circ}F$  ( $0^{\circ}C$ ) or less.

**14-17/14-18**: Section C402.4.5.2 Outdoor air intakes and exhausts; Section C403.2.4.4 Shutoff damper controls. Modify language to coordinate language with damper class rating, application.

C402.4.5.2 Outdoor air intakes, and exhaust outlets, relief outlets and return openings. Outdoor air supply, exhaust openings and relief outlets shall be provided with Class IA motorized dampers which close automatically when the system is off. Return air dampers shall be equipped with motorized dampers. Dampers shall have a maximum leakage rate of  $4 \text{ cfm/ft}^2$  (20.3 L/s × m²) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.

Return air openings used for airside economizer operation shall be equipped with Class I motorized dampers. Dampers shall have a maximum leakage rate of 4 cfm/ft<sup>2</sup> (20.3 L/s m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D

#### **Exceptions:**

- 1. Gravity (nonmotorized) dampers having a maximum leakage rate of  $20 \text{ cfm/ft}^2$  ( $101.6 \text{ L/s} \times \text{m}^2$ ) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D are permitted to be used for relief openings in buildings less than three stories in height above grade if equipment has less than 5,000 cfm total supply flow.
- 2. Gravity (nonmotorized) dampers for ventilation air intakes shall be protected from direct exposure to wind.
- 3. Gravity dampers smaller than 24 inches (610 mm) in either dimension shall be

- permitted to have a leakage of  $40 \text{ cfm/ft}^2 (203.2 \text{ L/s} \times \text{m}^2)$  at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.
- 4. Gravity (nonmotorized) dampers in Group R occupancies where the design outdoor air intake or exhaust capacity does not exceed 400 cfm (189 L/s).
- 5. Outdoor air intakes, exhaust outlets, relief outlets, and return openings provided in unitary packaged equipment shall be equipped with motorized dampers with the maximum leakage rate available as a standard factory option. The leakage rate for outdoor air intakes, exhaust outlets, and relief outlets shall not exceed 4 cfm/ft² (20.3 L/s m²) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.
- 4.6. Return air openings in unitary packaged equipment shall be equipped with motorized dampers but shall not be required to meet the leakage rating specified above.

**NOTE**: The 2015 IECC deletes this language from the envelope section and moves the requirements into the mechanical portion in Section C403.2.4.4 as the more appropriate section for these clearly mechanical requirements. A reference to complying with Section C403.2.4.4 is included in C402.4.5. This approach can also be used:

C402.4.5 Air intakes, exhaust openings, stairways and shafts. Stairway enclosures and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be provided with dampers in accordance with Sections C402.4.5.1 and C402.4.5.2C403.2.4.4.

C402.4.5.1 Stairway and shaft vents. Stairway and shaft vents shall be provided with Class I motorized dampers with a maximum leakage rate of 4 cfm/ft<sup>2</sup> (20.3 L/s × m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.

- —Stairway and shaft vent dampers shall be installed with controls so that they are capable of automatically opening upon:
- 1. The activation of any fire alarm initiating device of the building's fire alarm system;
- 2. The interruption of power to the damper.

C402.4.5.2 Outdoor air intakes and exhausts. *Outdoor air* supply, exhaust openings and relief outlets shall be provided with Class IA motorized dampers which close automatically when the system is off. Return air dampers shall be equipped with motorized dampers. Dampers shall have a maximum leakage rate of 4 cfm/ft² (20.3 L/s × m²) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.

#### **Exceptions:**

- 1. Gravity (nonmotorized) dampers having a maximum leakage rate of 20 cfm/ft<sup>2</sup> (101.6 L/s × m<sup>2</sup>) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D are permitted to be used for relief openings in buildings less than three stories in height above grade if equipment has less than 5,000 cfm total supply flow.
- 2. Gravity (nonmotorized) dampers for ventilation air intakes shall be protected from direct exposure to wind.
- 3. Gravity dampers smaller than 24 inches (610 mm) in either dimension shall be permitted to have a leakage of 40 cfm/ft² (203.2 L/s × m²) at 1.0 inch water gauge

- (w.g.) (249 Pa) when tested in accordance with AMCA 500D.
- 4. Gravity (nonmotorized) dampers in Group R occupancies where the design outdoor air intake or exhaust capacity does not exceed 400 cfm (189 L/s).

C403.2.4.4 Shutoff dampers controls. Both outdoor air supply and exhaust ducts shall be equipped with motorized dampers that will automatically shut when the systems or spaces served are not in use or during building warm up, cooldown, and setback. Outdoor air intake, and exhaust openings and relief outlets shall be provided with Class 1 motorized dampers which close automatically when the system is off. Dampers shall have a maximum leakage rate of 4 cfm/ft² at 1.0 inch water gauge (w.g.) and shall be labeled by an approved agency when tested in accordance with AMCA 500 D.

Return air openings used for airside economizer operation and stairway and shaft vents shall be provided with Class 1 motorized damper. Dampers shall have a maximum air leakage rate of 4 cfm/ft<sup>2</sup> of damper surface area at 1.0 inch water gauge and shall be labeled by an approved agency when tested in accordance with AMCA 500D for such purpose.

## **Exceptions:**

- 1. Gravity (nonmotorized) relief dampers serving systems less than 5,000 cfm total supply shall be permitted in buildings less than three stories in height-.
- 2. Gravity (nonmotorized) dampers shall be permitted for buildings of any height located in Climate Zones 1, 2 and 3 for ventilation air intakes shall be protected from direct exposure to wind.
- 3. Gravity (nonmotorized) dampers in Group R occupancies where the design outdoor air intake or exhaust capacity does not exceed 400 cfm (189 L/s).
- 4. Systems serving areas which require continuous operation.
- 5. Combustion air intakes.
- 6. Operation of dampers shall be allowed during ventilation prepurge one hour before expected occupancy and for unoccupied period precooling during the cooling season.
- 7. Dampers are not required in systems where specifically prohibited by the *International Mechanical Code*.
- 8. Outdoor air intakes, exhaust outlets, relief outlets, and return openings provided in unitary packaged equipment shall be equipped with motorized dampers with the maximum leakage rate available as a standard factory option. The leakage rate for outdoor air intakes, exhaust outlets, and relief outlets shall not exceed 4 cfm/ft² (20.3 L/s m²) at 1.0 inch water gauge (w.g.) (249 Pa) when tested in accordance with AMCA 500D.
- 9. Return air openings in unitary packaged equipment shall be equipped with motorized dampers but shall not be required to meet the leakage rating specified above.

All gravity (non-motorized) dampers shall have a maximum air leakage rate of 20 cfm/ft2 where not less than 24 inches in either dimension and 40 cfm/ft2 where less than 24 inches in either dimension. The rate of air leakage shall be determined at 1.0 inch water gauge when tested in accordance with AMCA 500D.